Maintaining a Vital Chesapeake Bay

Chesapeake Bay Local Assistance Department

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Agency Overview:

- Agency's mission
- Support for Tidewater Localities
- Local Bay Act Programs
- Bay Area Protection Criteria

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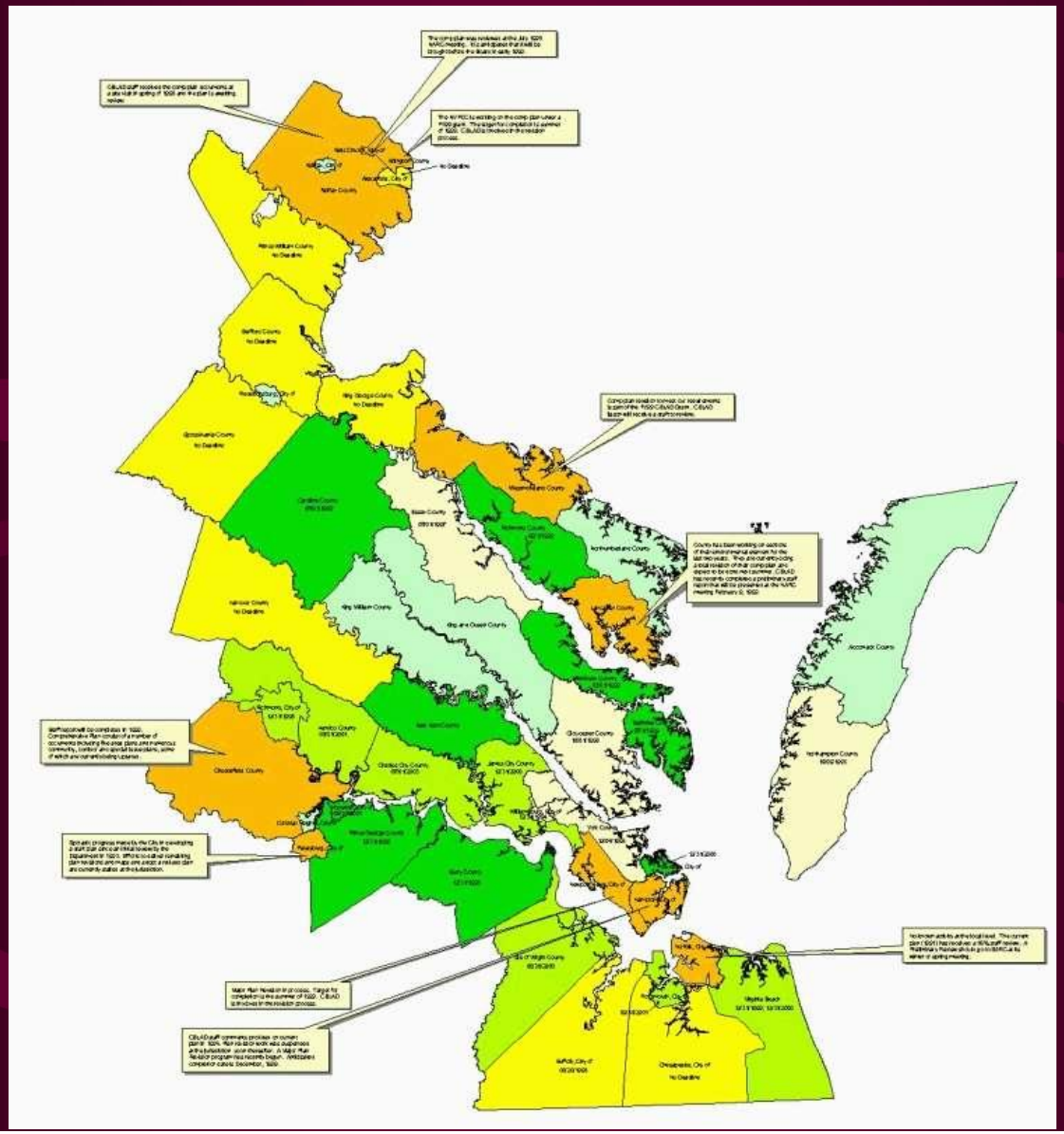
Agency's Goals:

- Chesapeake Bay Act Regulations:
  - No net increase in non-point source pollution from new development
  - 10% reduction in NPS pollution from redevelopment
  - 40% reduction in agriculture / silviculture
- Assist local governments in compliance measures

Agency Service Area: Tidewater Virginia



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Virginia Naturally 2000

Linking Virginians to the Environment

Agency Support for Tidewater Localities:

Protection and restoration of the Chesapeake Bay's natural systems through:

* Local Bay Act programs
* Agency Technical and Financial Assistance
* Advisory Site Plan Review
* Local program implementation oversight
* Polecat Creek Water Quality Monitoring Project

Local Bay Act Programs:

- Land Use Planning
- Water Quality Protection
- Establishment of Bay Preservation Areas
- Amend Zoning and Sub-division Ordinances, and Comp. Plans

Chesapeake Bay Preservation Features:

- Vegetative riparian buffer zones
- Floodplains and wetlands
- Highly erodible soils
- Highly permeable soils

Technical Overview:

- Defining the 'Data Challenge'
  - Incomplete data libraries
  - Matters of 'Position and Condition'
- Present utilization of RS data:
  - Polecat Creek Watershed Monitoring
  - Port Royal CBPA feature identification

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Defining the Data Challenge:

- Incomplete thematic data sets
- Inadequate Resolution:
  - 1:24,000 source data serving 1:4800 parcel maps
- Age and ‘timeliness’ of existing data

Problematic feature delineation:

- Stream perenniality
- Accurate watershed delineation
- Tidal and weather influences on shores
- Vegetation succession and regression
- Natural vs Anthropogenic influences
- Plan review and site verification
- Connectivity of wetlands to tributaries

Gloucester Point Wetlands:

Present Uses of Remotely Sensed Imagery:

- 'Tightening' existing GIS data
- Deriving new or more current GIS thematic data
- Polecat Creek Water Quality Monitoring Project LU/LC delineation

Polecat Creek Water Quality Monitoring Project:

- 10-year, integrated study of the water quality and land use changes
- Biological, Hydrological and Chemical components
- GIS for spatial and temporal analysis of land use change
- Watershed Modeling

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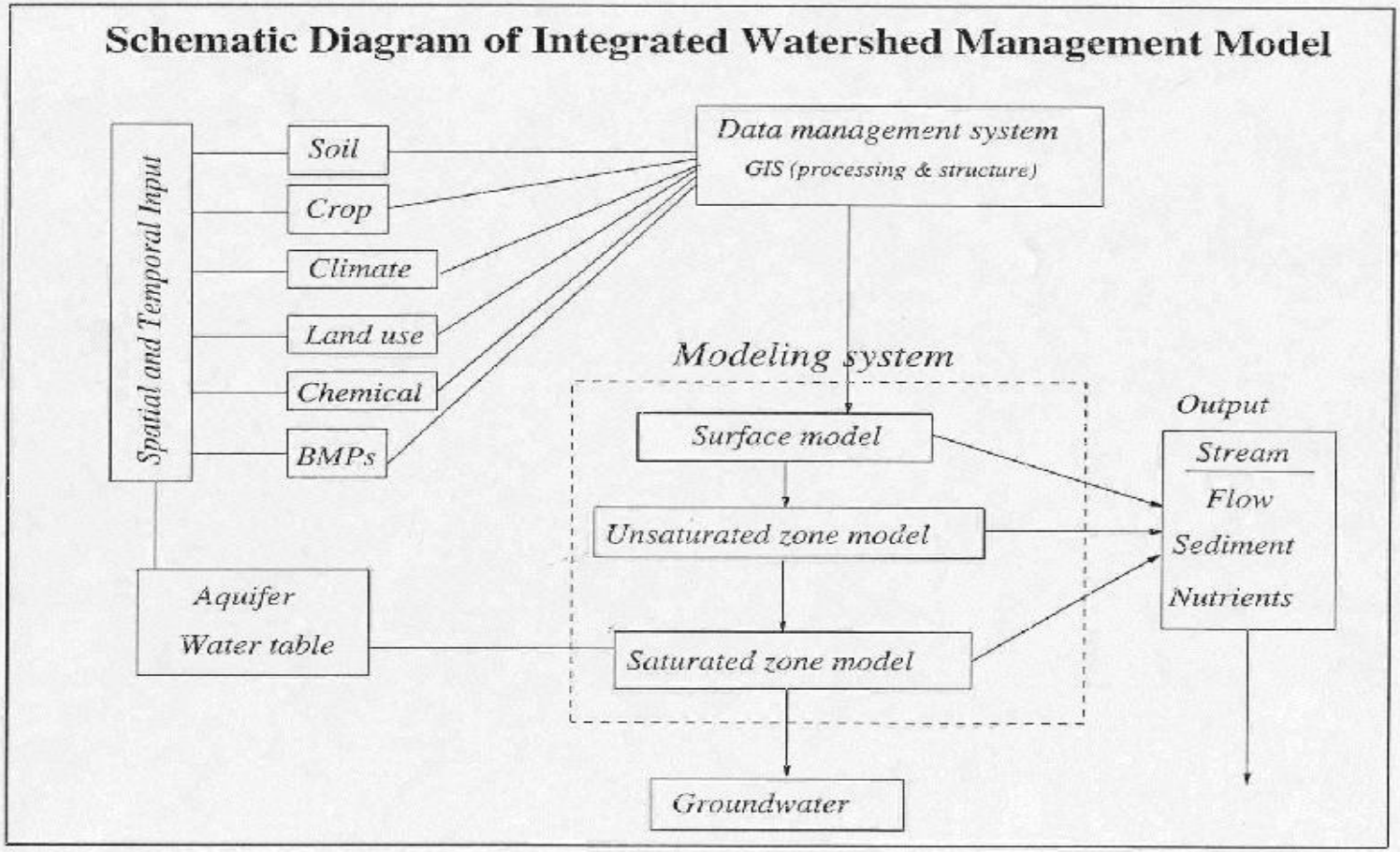
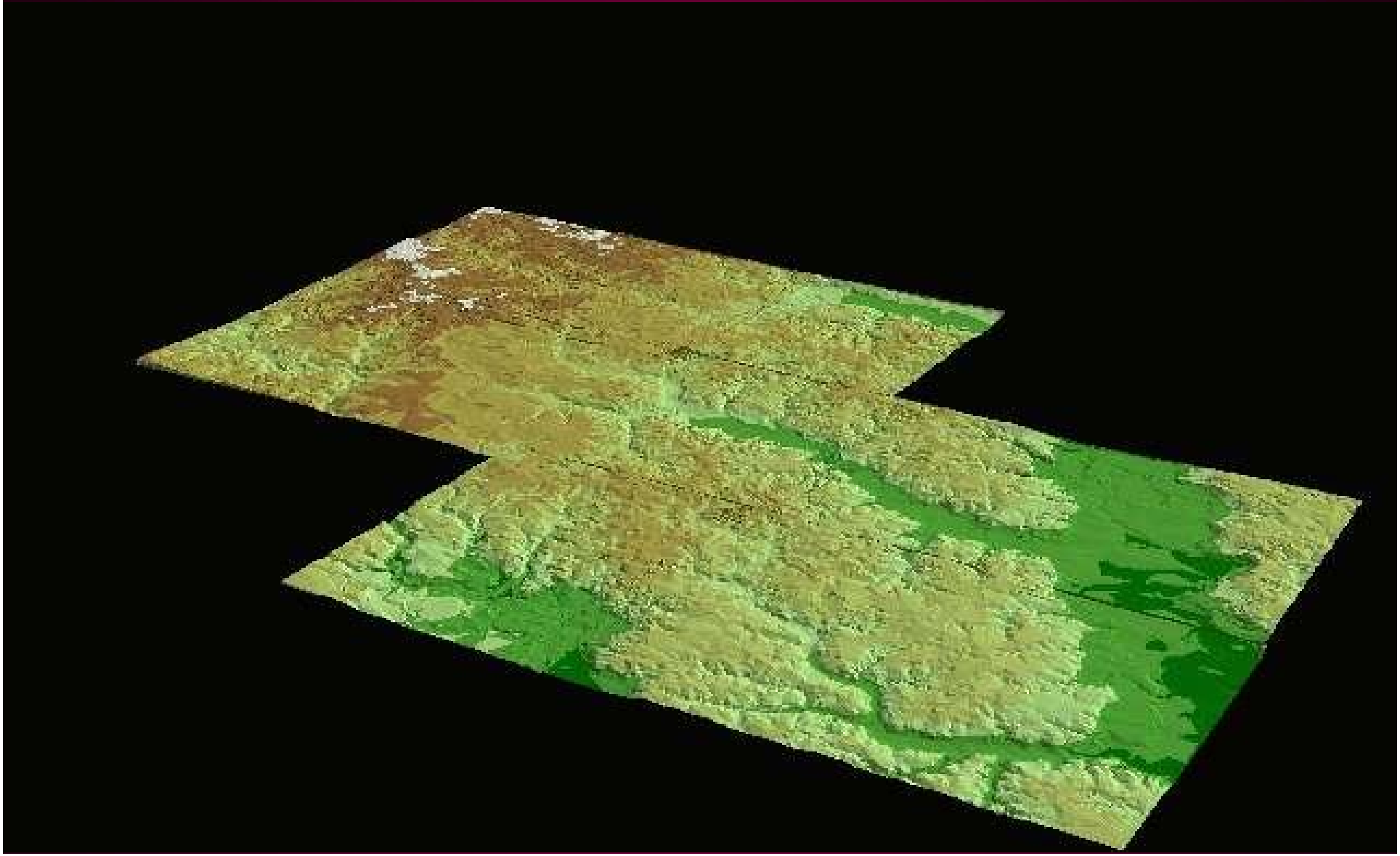
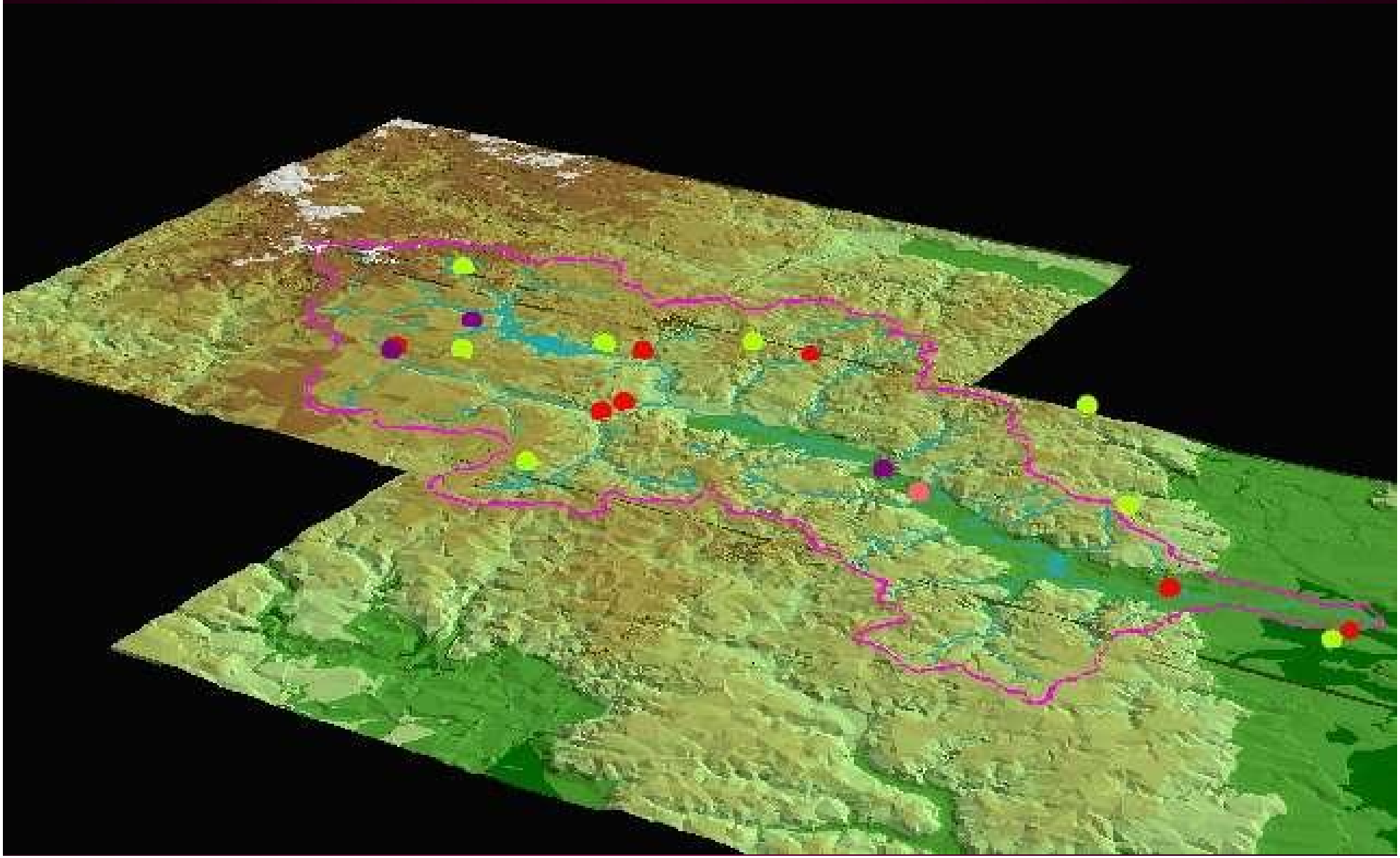
Integrated Watershed Management Model:



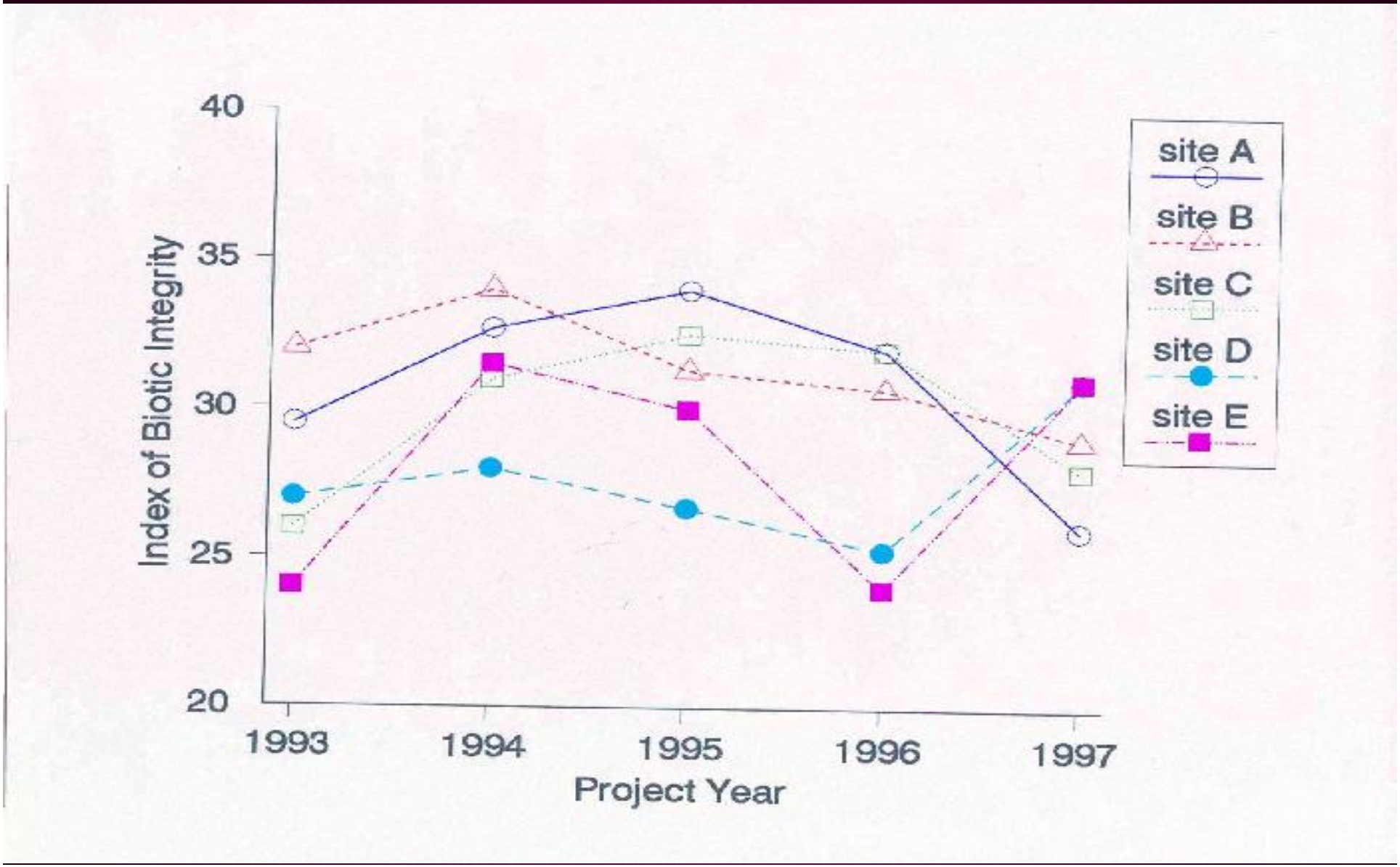
Polecat Creek Watershed (TIN):



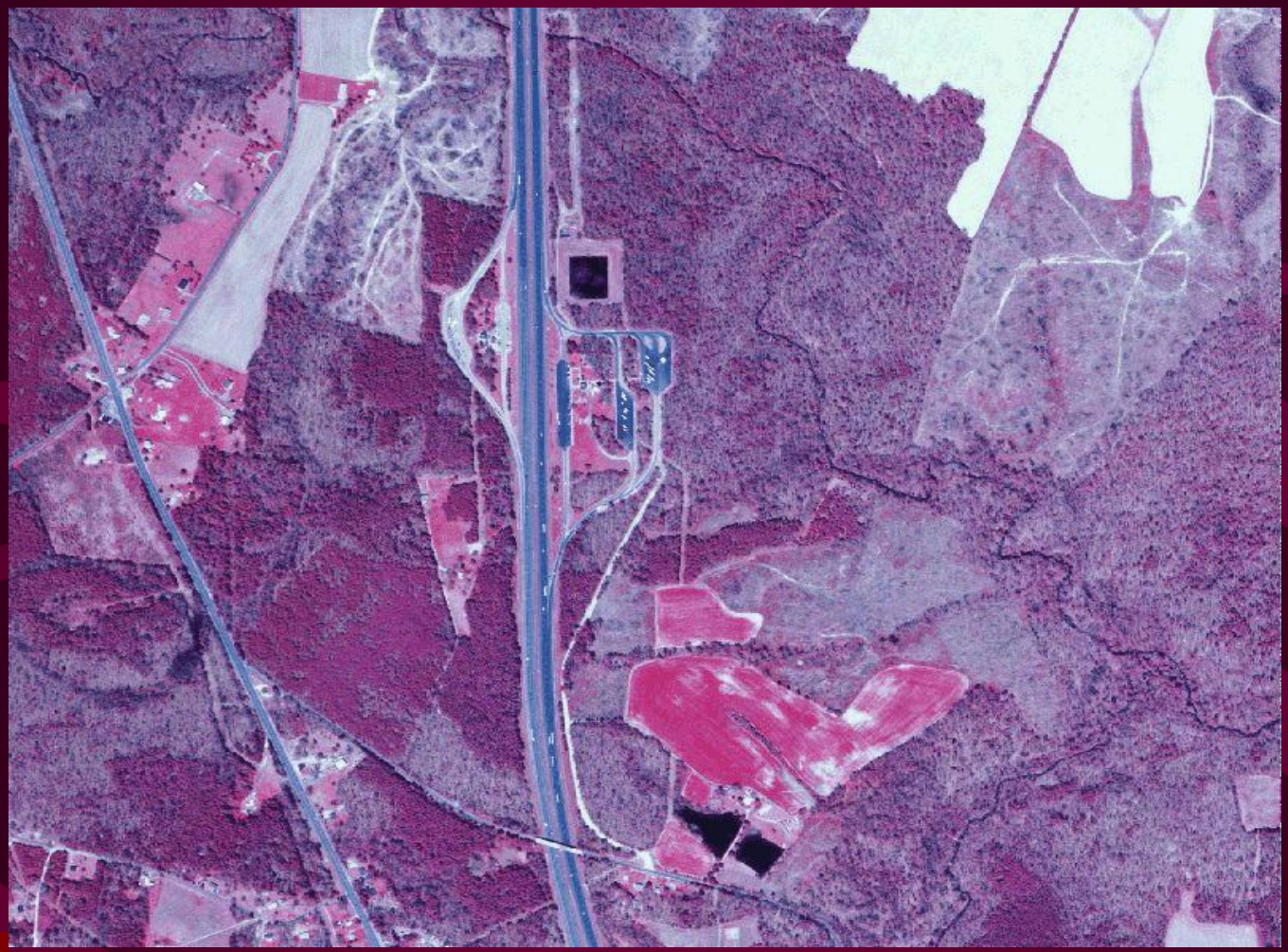
Polecat Creek Watershed Monitoring Sites:



Polecat Creek Monitoring Data:



FCIR DOQQ Aerial Photos:



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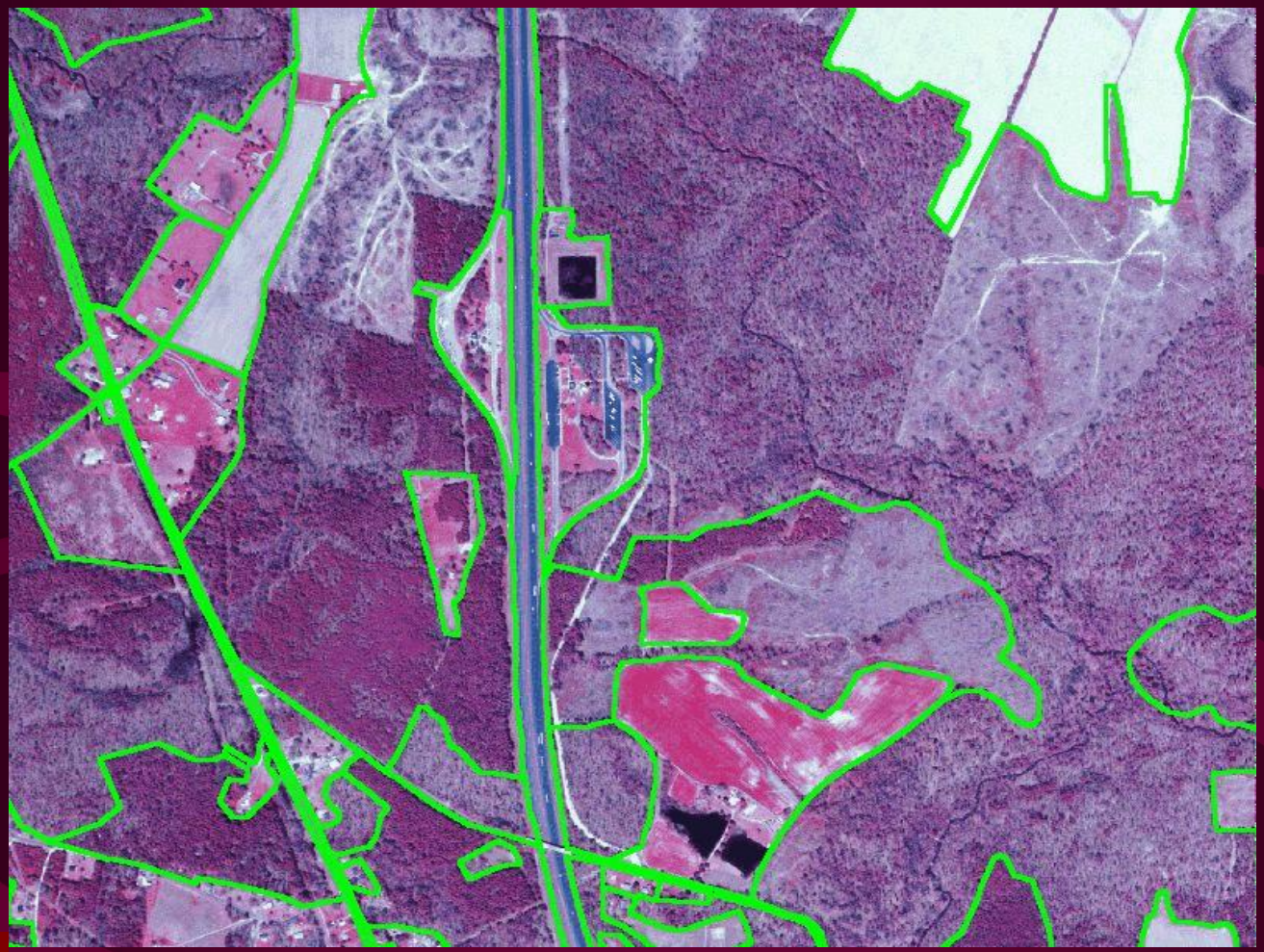
Landuse Data Generation:



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Vector Data Overlay:

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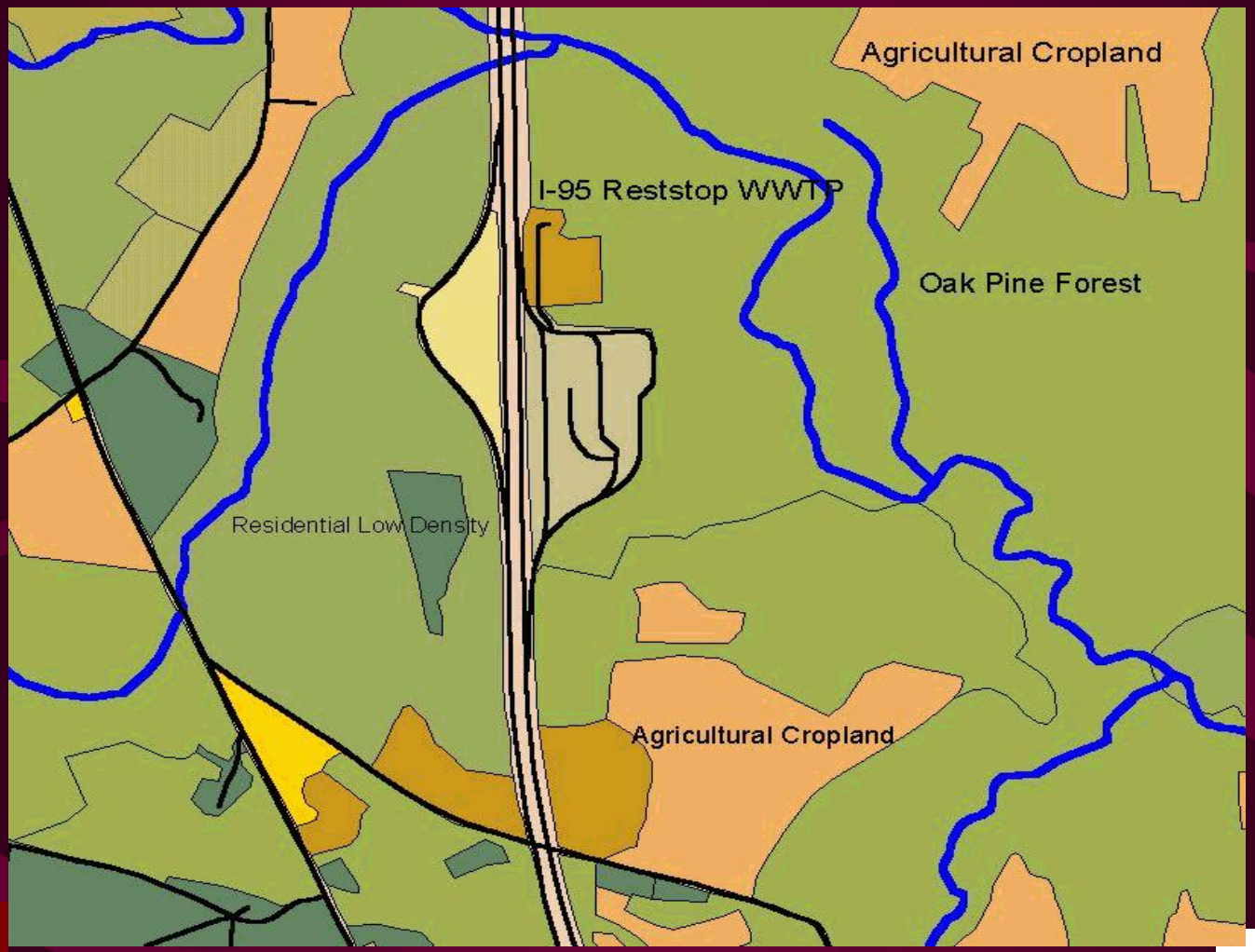
LULC and Hydrology Theme Output:



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Comparison of LULC from ‘93 to ‘99

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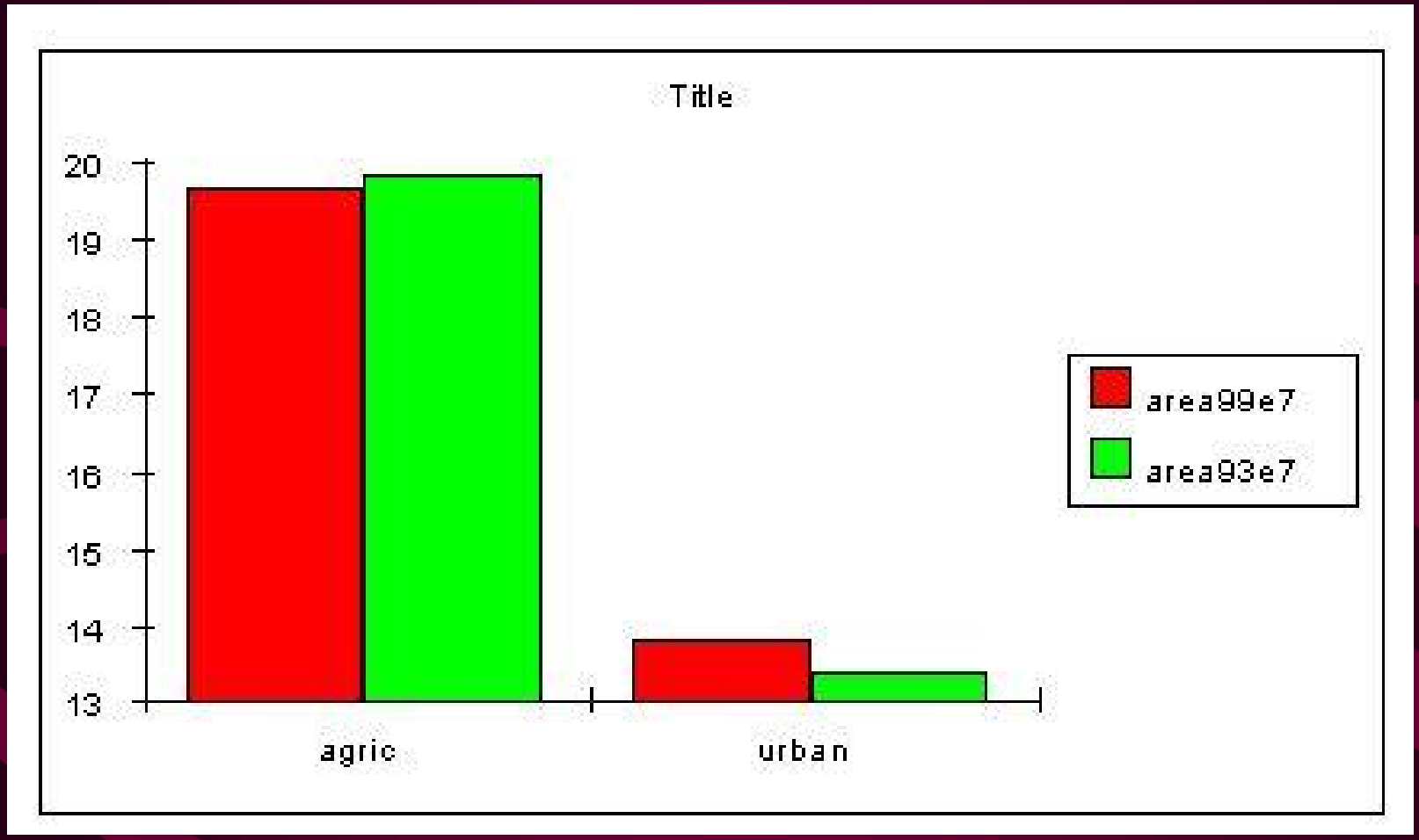
Landuse Change Output Information:



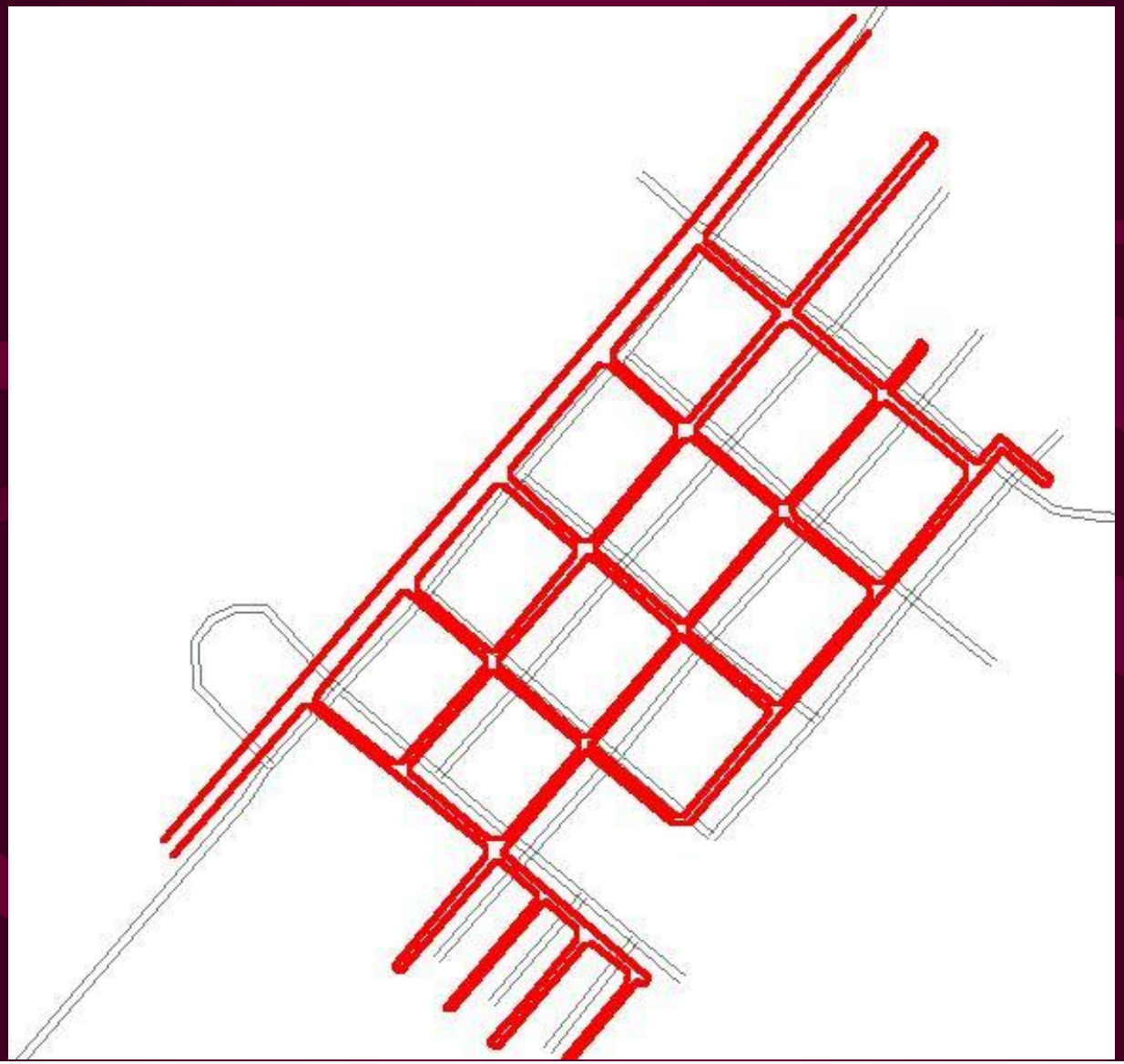
Port Royal CBPA Delineation:

- Local government example of spatial and temporal data application
- Considering re-evaluation of RMA
- High resolution needs
- Floodplain in question

Port Royal CBPA Identification:

Port Royal Street Data Capture:

Port Royal Street Data Enhancement:



In Conclusion ...

The Future Utilization of Remotely Sensed Data for the Chesapeake Bay

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Future Utilization of Remotely Sensed Data:

- Enhance feature identification
- Timely verification of area conditions
- Increase cost effectiveness
- ‘Knowledge base’ rather than ‘Knowledge gap’